

High ER PM Fiber Optic Coupler/Splitter



PER 28- 30, 450 -2400nm, 1x2, axis blocking option

DATASHEET

BUY NOW



Features

- Low Loss
- High Reliability
- High Repeatability

Applications

- Instrumentation
- Sensor

The FC Series PM fiber optic coupler is based micro-optic technology in a compact package. It features exceptionally high polarization extinction ratio and broad operation wavelength. The device is designed for applications that fused coupler can not meet the stringent requirement. It is available for all PM fiber types. The platform is highly versatile to integrate other components without increase size. It can be made with single polarization working only or dual polarization working types.

Couplers are highly efficient in splitting light with little loss, about 0.2dB per joint, but incur significant losses when combining lights; for example, a 50/50 coupler produces a 50% loss to each beam when combined. For beam-combining applications, search Combiner.

Specifications

Parameter	Min	Typical	Max	Unit	
Coupling Ratio		1/99 to 50/50		%	
Center Wavelength	450		2400	nm	
Wavelength Bandwidth	± 20		± 40	nm	
Directivity		> 55		dB	
Excess Loss ^[1]	1310-1550nm	≤ 0.7	≤ 0.8	≤ 1	dB
	980-1060nm	≤ 0.9	≤ 0.9	≤ 1	dB
Polarization Extinction Ratio (PER) ^[2]	28		33	dB	
Return Loss ^[3]		> 55		dB	
Split Ratio Tolerance	± 3.8		± 3.8	%	
Optical Power Handling	Regular	0.3		W	
	High Power	5		W	
Operating Temperature	-40		85	°C	
Storage Temperature	-50		85	°C	

Notes:

- [1]. Without connector. Each connector adds 0.3dB and 0.5dB for short wavelength
- [2]. Without connector. Each connector adds 2dB
- [3]. Without connector. Each connector adds 5dB
- [4]. Regular power only, High power version is special package

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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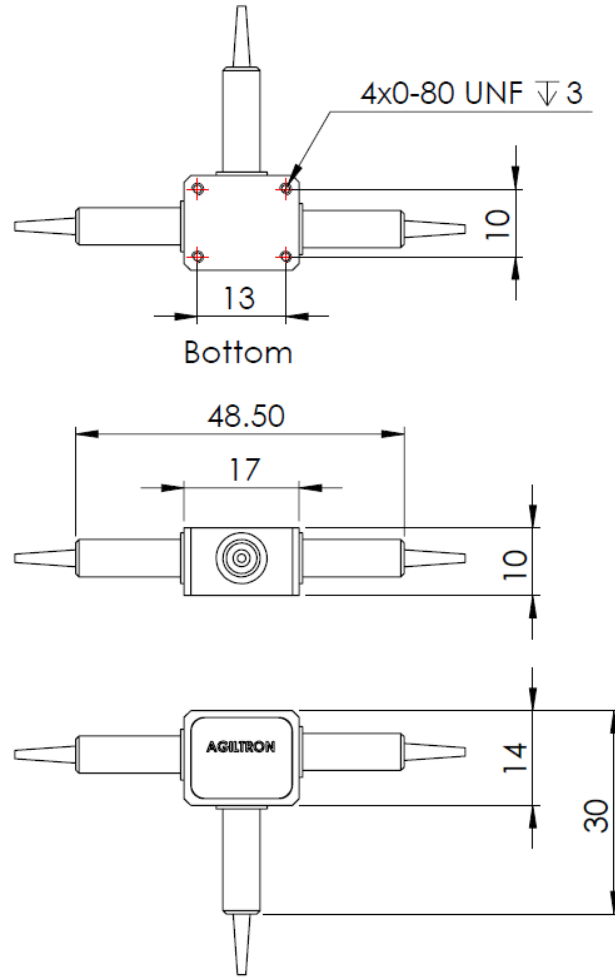
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Mechanical Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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Ordering Information

Prefix	Wavelength	Power ^[1]	Configuration	Ratio	Port	Fiber Type	Fiber Cover	Connector ^[4]	PER
HEPC-	1060 = 1 1310 = 3 1550 = 5 980 = 9 1600 = 6 2000 = 2 480 = A 530 = B 540 = C 560 = D 630 = E 670 = F 1480 = G Special = 0	0.3W = 1 1W = 2 5W = 3 10W = 4	Slow AW, FAB ^[2] = 1 Both AW ^[3] = 2	01/99 = 1 02/98 = 2 05/95 = 3 10/90 = 4 15/85 = 5 20/80 = 6 30/70 = 7 40/60 = 8 50/50 = 9 Special = 0	1x2 = 1 2x2 = 2	PM1550 = 1 Special = 0	250µm = 1 900µm tube = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 28PERFC/PC = 6 28PERFC/APC = 7 Special = 0	>28 = 1 >30 = 2

[1]. For 1550nm, shorter wavelength power reduced substantially.

[2]. Slow axis working, Fast axis blocked

[3]. Both axes working, but only one axe is optimized to have high ER

[4]. The default connector is key aligned to slow axis with narrow key with ER>22. >28 PER connector \$290 ea.,
Each connector adds 0.3dB IL, 5dB RL, and 2dB RE increases

Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 µm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.